



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Elazar Rabbani et al.

#27/I.D.S

Serial No. 08/978,633

Group Art Unit: 1635

Filed: November 25, 1997

Examiner: Mary M. Schmidt

Title: NOVEL PROPERTY EXHIBITING AND/OR  
PROPERTY EXHIBITING COMPOSITIONS  
FOR THERAPEUTIC AND DIAGNOSTIC USE

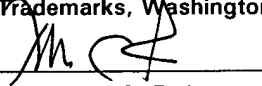
**TRANSMITTAL  
INFORMATION DISCLOSURE STATEMENT**

COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

Sir:

Transmitted herewith is an Information Disclosure Statement which is being filed in accordance with 37 C.F.R. §§ 1.56 and 1.97-1.98. The items listed on Form PTO-1449, a copy of which is enclosed, may be deemed to be pertinent to the above-identified application and are made of record to assist the Patent and Trademark Office in its examination of this application. The Examiner is respectfully requested to fully consider the items and to independently ascertain their teaching.

1. [ ] For each of the following items listed on the enclosed copy of Form PTO-1449 that is not in the English language, an English language translation of that item or a portion thereof or a concise explanation of the relevance of that item is enclosed:

EXPRESS MAIL CERTIFICATE	
"Express Mail" Label No.	EL647884447US
Deposit Date	March 7, 2003
I hereby certify that this paper and the attachments herein are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington DC 20231.	
 Ronald C. Fedus Reg. No. 32,567	MAR 7 2003 Date

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2. ☐ For each of the following items listed on the enclosed copy of form PTO-1449 that is not in the English language, a concise explanation of the relevance of that item is incorporated in the specification of the above-identified application.
3. ☐ Any copy of the items on the enclosed copy of Form PTO-1449 that is not enclosed with this Information Disclosure Statement was previously cited by or submitted to the Patent and Trademark Office in the prior ☐ Divisional or ☐ Continuation-In-Part application under 37 C.F.R. §1.60, U.S. Serial No. \_\_\_\_\_, filed \_\_\_\_\_.
4. ☐ No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with:
- ☐ 37 C.F.R. 1.97(b)(1), within three months of the filing date of the above-identified application.
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  - ☐ 37 C.F.R. 1.97(b)(3), before the mailing date of a first Office action on the merits.
5. ☐ No fee is due under 37 C.F.R. 1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a Notice of Allowance (where there has been no prior final action), and is accompanied by one of the certifications pursuant to 37 C.F.R. 1.97(e) set forth in paragraph 9 below.
6. ☒ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a notice of allowance (where there has been no prior final action):
- ☐ A check in the amount of \$240.00 is enclosed in payment of the fee.
  - ☒ Charge the fee to Deposit Account No. 05-1135, Order No. ENZ-53(D1). A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

7. ☐ A fee is due under 37 C.F.R. §1.17(i)(1) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(d), after the mailing date of a final action or a notice of allowance, whichever comes first, but before payment of the issue fee, and is accompanied by:

- a. one of the certification pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below; and
- b. the attached petition requesting consideration of this Information Disclosure Statement; and
- c. the fee due under 37 C.F.R. §1.17(i)(1) which is paid as set forth in paragraph 10 below.

8. ☐ A fee is due under 37 C.F.R. §1.17(i)(1) for this Information Disclosure Statement since it is being filed in compliance with:

- a. ☐ 37 C.F.R. §1.313(b)(3), after the issue fee has been paid and information cited in this Information Disclosure Statement may render at least one claim unpatentable and is accompanied by the attached Petition To Withdraw Application From Issue;
- b. ☐ 37 C.F.R. §1.313(b)(5), after the issue fee has been paid and information cited in this Information Disclosure Statement is to be considered in a Continuation application upon abandonment of the instant application and is accompanied by the attached Petition To Withdraw Application From Issue.
- c. ☐ The fee due under 37 C.F.R. §1.17(i)(1) is paid as set forth in paragraph 10 below.

9. ☐ I hereby certify that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.

☐ I hereby certify that no item of information in the Information Disclosure Statement filed herewith was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

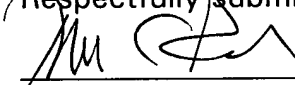
Elazar Rabbani et al.  
Serial No.: 08/978,633  
Filed: November 25, 1997  
Page 4 [Information Disclosure Statement] -- March 7, 2003

10. ☐ A check in the amount of \$130.00 is enclosed in payment of the fee due under 37 C.F.R. §1.17(i)(1).

☒ Charge the fee under 37 C.F.R. §1.17(i)(1) to Deposit Account No. 05-1135. Order No. \_\_\_\_\_. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

☒ The Commissioner is hereby authorized to charge any additional fees which may be required for this Information Disclosure Statement, or credit any overpayment to Deposit Account No. 05-1135. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Dated: March 7, 2003

Respectfully submitted,  
  
By: \_\_\_\_\_  
RONALD C. FEDUS  
Registration No. 32,567  
Attorney for Applicants

Mailing Address:

ENZO LIFE SCIENCES, INC.  
f/k/a Enzo Diagnostics, Inc.  
c/o Enzo Biochem, Inc.  
292 Madison Avenue, 9<sup>th</sup> Floor  
New York, New York 10022  
Telephone: (212) 583-0100  
Telefax: (212) 583-0150



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#1635

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Applicant(s): Rabbani et al.

Serial No.: 08/978,633

Filed: November 25, 1997

For: **NOVEL PROPERTY EFFECTING  
AND/OR PROPERTY EXHIBITING  
COMPOSITIONS FOR THERAPEUTIC  
AND DIAGNOSTIC USES**

Group Art Unit: 1635

Examiner: Mary M. Schmidt

527 Madison Avenue, 9th Floor  
New York, NY 10022-4304  
March 7, 2003

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Commissioner for Patents  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §§1.56 & 1.97-1.98**

Dear Sirs:

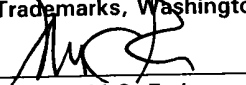
Pursuant to the provisions of 37 C.F.R. §§1.97-1.98, and in full compliance with their duty of disclosure under 37 C.F.R. §1.56, Applicants, through their attorney, are bringing the following eighty-one (81) documents to the attention of the U.S. Patent and Trademark Office and the Examiner handling their above-identified application:

Elazar Rabbani et al.

Serial No. 08/978,633

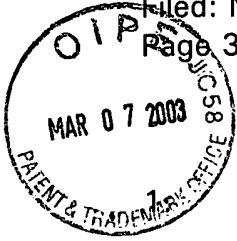
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Page 2 (Information Disclosure Statement Under 37 C.F.R. §§1.56 & 1.97-I.98  
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Page 3 (Information Disclosure Statement Under 37 C.F.R. §§1.56 & 1.97-1.98  
- March 7, 2003)



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- Wu, G.Y. and Wu, C.H., U.S. Patent No. 5,166,320 issued November 24, 1992 [Exhibit 1];
2. Williams, D.A. and Patel, V.P., International Patent Application No. PCT/US95/03817 filed March 27, 1995, published as PCT Patent Application Publication Number WO 95/26200 published October 5, 1995 [Exhibit 2];
  3. Ward, D.C. et al., U.S. Patent No. 4,687,732 issued August 18, 1987 [Exhibit 3];
  4. Schwartz, D.A. et al., "Construction of a retrotransposon indicator, sequence using a neomycin resistance-encoding gene containing a functional intron," Gene 127:233-236 (1993) [Exhibit 4];
  5. Dunn J.J. et al., "Targeting bacteriophage T7 RNA polymerase to the mammalian cell nucleus," Gene 68:259-266 (1988) [Exhibit 5];
  6. Fuerst, T.R. et al., et al., "Eukaryotic transient-expression system based on recombinant vaccinia virus that synthesizes bacteriophage T7 RNA polymerase," Proc. Nat Acad. Sci. U.S.A. 83: 8122-8126 (1986) [Exhibit 6];
  7. Lieber, A. et al., "High level gene expression in mammalian cells by a nuclear T7-phage RNA polymerase," Nucleic Acids Research 17(21): 8485-8493 (1989) [Exhibit 7];
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11. Kotani, H. et al., "Nucleotide sequence and expression of the cloned gene of bacteriophage SP6 RNA polymerase," Nucleic Acids Research 15(6):2653-2664 (1987) [Exhibit 11];
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14. Zieve, G.W. and Sautereau, R.A., "Cell Biology of the snRNP Particles," Biochemistry and Molecular Biology 25(1):1-46 (1990) [Exhibit 14];
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16. You, C-Y and Weiner, A.M., "A U1 Small Nuclear Ribonucleoprotein Particle with Altered Specificity Induces Alternative Splicing of an Adenovirus E1A mRNA Precursor," Molecular and Cellular Biology 9(8):3429-3437 (1989)) [Exhibit 16]
17. Chen, C.J. et al., "Inhibition of HIV-1 Replication by Novel Multitarget Ribozymes," Antisense Strategies, Annals of the New York Academy of Sciences 660:271-273 (1992) [Exhibit 17]
18. Zhou Z. et al., "Inhibition of HIV-1 in human T-lymphocytes by retrovirally transduced anti-*tat* and *rev* hammerhead ribozymes," Gene 149:33-39 (1994) [Exhibit 18]
19. Lisiewicz, J. et al., "Inhibition of human immunodeficiency virus type 1 replication by regulated expression of a polymeric Tat activation response RNA decoy as a strategy for gene therapy in AIDS," Proc. Natl. Acad. Sci. USA 90:8000-8004 (1993) [Exhibit 19]



20. Husson, R.N. et al., "Phase I study of continuous-infusion soluble CD4 as a single agent and in combination with oral dideoxyinosine therapy in children with symptomatic human immunodeficiency virus infection," The Journal of Pediatrics 121(4):621-633 (1992) [Exhibit 20]
21. Yu, M. et al., "Progress towards gene therapy for HIV infection," Gene Therapy 1:13-16 (1994) [Exhibit 21]
22. Sczakiel, G. et al., "Tat- and Rev-Directed Antisense RNA Expression Inhibits and Abolishes Replication of Human Immunodeficiency Virus Type 1: a Temporal Analysis," Journal of Virology 66(9):5576-5581 (1992) [Exhibit 22]
23. Sczakiel, G. and Pawlita, M., "Inhibition of Human Immunodeficiency Virus Type 1 Replication in Human T Cells Stably Expressing Antisense RNA," Journal of Virology 65(1):468-472 (1991) [Exhibit 23]
24. Cotton, M. and Birnstiel, M.L., "Ribozyme mediated destruction of RNA *in vivo*," The EMBO Journal 8(12):3861-3866 (1989) [Exhibit 24]
25. Nichols, R. et al., "A universal nucleoside for use at ambiguous sites in DNA primers," Nature 369:492-493 (1994) ] [Exhibit 25]
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27. Engelhardt D., et al., U.S. Patent No.5, 260,433 issued November 9, 1993 [Exhibit 27]
28. Ward D.C. et al., U.S. Patent No. 4,711,955 issued December 8, 1987 [Exhibit 28]
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33. Wagner, E. et al., "Coupling of adenovirus to transferring-polylysine/DNA complexes greatly enhances receptor-mediated gene delivery and expression of transfected genes," Proc. Natl. Acad. Sci. USA 89:6099-6103 (1992) [Exhibit 33]
34. Ruoslahti, E. et al., "Alignment of Biologically Active Domains in the Fibronectin Molecule," The Journal of Biological Chemistry 256(14):7277-7281 (1981) [Exhibit 34]
35. Cristiano, R.J. et al., "Hepatic gene therapy: Adenovirus enhancement of receptor-mediated gene delivery and expression in primary hepatocytes," Proc. Natl. Acad. Sci. USA 90:2122-2126 (1993) [Exhibit 35]
36. Curiel, D.T. et al. "Adenovirus enhancement of transferring-polylysine-mediated gene delivery," Proc. Natl. Acad. Sci. USA 88:8850-8854 (1991) [Exhibit 36]
37. Wagner, E. et al., "Influenza virus hemagglutinin HA-2 N-terminal fusogenic peptides augment gene transfer by transferring-polylysine-DNA complexes: Toward a synthetic virus-like gene-transfer vehicle," Proc. Natl. Acad. Sci. USA 89:7934-7938 (1992) [Exhibit 37]
38. Argos, P. et al., "The integrase family of site-specific recombinases: regional similarities and global diversity," The EMBO Journal 5(2):433-440 (1986) [Exhibit 38]
39. Brakel et al., [U.S. Patent Application Serial No. 07/446,235 [Exhibit 39]\*

40. Kessler, C., "Detection of Nucleic Acids by Enzyme-Linked Immuno-Sorbent Assay (ELISA) Technique: An Example for the Development of a Novel Nonradioactive Labeling and Detection System With High Sensitivity," in Advances in Mutagenesis Research 1, Obe, G. Ed., Springer Verlag, Berlin, 105-152 (1990) [Exhibit 40]
41. Rigby, P.W. et al., "Labeling Deoxyribonucleic Acid to High Specific Activity in Vitro by Nick Translation with DNA Polymerase," Journal of Molecular Biology 113:237-251 (1977) [Exhibit 41]
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47. Jablonski, E. et al., "Preparation of oligodeoxynucleotide-alkaline phosphatase conjugates and their use as hybridization probes," Nucleic Acids Research 14(15):6115-6128 (1986) [Exhibit 47]
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51. Holliger, P. et al., ""Diabodies": Small bivalent and bispecific antibody fragments," Proc. Natl. Acad. Sci. USA 90:6444-6448 (1993) [Exhibit 51]
52. Anderson, W.F. et al., "Structure of the cro repressor from bacteriophage and its interaction with DNA," Nature 290:754-758 (1981) [Exhibit 52]
53. Palsson, B.O. et al., "Expansion of Human Bone Marrow Progenitor Cells in a High Cell Density Continuous Perfusion System," Biotechnology 11:372368 (1993) [Exhibit 53]
54. Koller, M.R., et al., "Expansion of Primitive Human Hematopoietic Progenitors in a Perfusion Bioreactor System with IL-3, IL-6, and Stem Cell Factor," BioTechnology 11:358-363 (1993) [Exhibit 54]
55. Koller M.R. et al., "Large-Scale Expansion of Human Stem and Progenitor Cells From Bone Marrow Mononuclear Cells in Continuous Perfusion Cultures," Blood 82(2):378-384 (1993) [Exhibit 55]
56. Stavrianopoulos, J., U.S. Patent No. 4,843,122 issued June 27, 1989 [Exhibit 56]
57. Engelhardt, D. et al., European Patent No. EP 0 285 057 B1 granted March 1, 1995 [Exhibit 57]
58. Mount, S.M., "A catalogue of splice junction sequences," Nucleic Acids Research 10(2):472 (1982) [Exhibit 58]
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60. Chu, F.K. et al., "Intervening sequence in the thymidylate synthase gene of bacteriophage T4," Proc. Natl. Acad. Sci. USA **81**:3049-3053 (1984) [Exhibit 609]
61. Chu F.K. et al., "In Vitro Expression of the Intron-containing Gene for T4 Phage Thymidylate Synthase," The Journal of Biological Chemistry **260**(19):10680-10688 (1985) [Exhibit 61]
62. Muzyczka, N., "Use of Adeno-Associated Virus as a General Transduction Vector for Mammalian Cells," Current Topics in Microbiology and Immunology **158**:97-129 (1992) ] [Exhibit 62]
63. Rafestin, M.E. et al., "Purification of N-Acetyl D-Glucosamine-Binding Proteins By Affinity Chromatography," FEBS Letters **40**(1):62-66 (1974) [Exhibit 63]
64. Lear, J.D. and DeGrado, W.F., "Membrane Binding and Conformational Properties of Peptides Representing the NH<sub>2</sub> Terminus of Influenza HA-2," The Journal of Biological Chemistry **262**(14):6500-6505 (1987) ] [Exhibit 64]
65. Kalderon D. et al., "A Short Amino Acid Sequence Able To Specify Nuclear Location," Cell **39**:499-509 (1984) [Exhibit 65]
66. Stavrianopoulos J.G. et al., "Mechanism of DNA Replication by Highly Purified DNA Polymerase of Chicken Embryo," Proc. Nat. Acad. Sci. USA **69**(9):2609-2613 (1972) [Exhibit 66]
67. Nitta, T. et al., "Bispecific F(ab')<sub>2</sub> monomer prepared with anti-CD3 and anti-tumor monoclonal antibodies is most potent in induction of cytolysis of human T cells," Eur J. Immunol. **19**:1437-1441 (1989) [Exhibit 67]
68. Horton, R.M. et al., "Gene Splicing by Overlap Extension Tailor-Made Genes Using the Polymerase Chain Reaction," BioTechniques **8**(5):528-535 (1990) [Exhibit 68]
69. Horton, R.M. et al., "Engineering hybrid genes without the use of restriction enzymes: gene splicing by overlap extension," Gene **77**:61-68 (1989) [Exhibit 69]

70. Scharf, S.J. et al., "Direct Cloning and Sequence Analysis of Enzymatically Amplified Genomic Sequences," Science 233:1076-1078 (1986) [Exhibit 70]
71. Saiki, R.K., et al., "Enzymatic Amplification of Beta-Globin Genomic Sequences and Restriction Site Analysis for Diagnosis of Sickle Cell Anemia," Science 230:1350-1354 (1985) [Exhibit 71]
72. Kozak, M., "Point Mutations Define a Sequence Flanking the AUG Initiator Codon That Modulates Translation by Eukaryotic Ribosomes," Cell 44:283-292 (1984) [Exhibit 72]
73. Joshi, S. et al., "Inhibition of Human Immunodeficiency Virus Type 1 Multiplication by Antisense and Sense RNA Expression," Journal of Virology 65(10):5524-5530 (1991) [Exhibit 73]
74. Sczakiel, G. et al., "Specific inhibition of immunodeficiency virus type 1 replication by RNA transcribed in sense and antisense orientation from the 5'-leader/gag region," Biochemical and Biophysical Research Communication 169(2):643-651 (1990) [Exhibit 74]
75. Dunn, J.J. and Studier, F.W., "Complete Nucleotide Sequence of Bacteriophage T7 DNA and the Locations of T7 Genetic Elements," J. Mol. Biol. 166:477-535 (1983) [Exhibit 75]
76. Sandig V. et al., "A phage t& class-III promoter functions as a polymerase II promoter in mammalian cells," Gene 131:255-259 (1993) [Exhibit 76]
77. Harrison G.S. et al., "Inhibition of Human Immunodeficiency Virus-1 Production Resulting from Transduction with a Retrovirus Containing an HIV-Regulated Diphtheria Toxin A Chain Gene," Human Gene Therapy 3:461-469 (1992) [Exhibit 77]
78. Manser, T. and Gesteland, R.F., "Human U1 Loci" Genes for Human U1 RNA Have Dramatically Similar Genomic Environments," Cell 29:257-264 (1982) [Exhibit 78]
79. McBurney M.W. et al., "The mouse Pgk-1 gene promoter contains an upstream activator sequence," Nucleic Acids Research 19(20):5755-5761 (1991) [Exhibit 79]

80. Laurence, J. et al., "Induction of Chronic Human Immunodeficiency Virus Infection Is Blocked In Vitro by a Methylphosphonate Oligodeoxynucleoside Targeted to a U3 Enhancer Element," The Journal of Virology 65(1):213-219 (1991) [Exhibit 80]
81. Soeiro, R. and Darnell, J.E., "Competition Hybridization by "Pre-saturation" of HeLa Cell DNA," J. Mol Biol 44:551-562 (1969) [Exhibit 81]

The above eighty-one documents [Exhibits 1-81] were cited in the instant specification.

A completed Form PTO-1449 listing the eighty-one above-submitted documents is also attached hereto as Exhibit A.

By this voluntary citation of art, Applicants and their attorney are requesting that the documents be made of record in the present application.

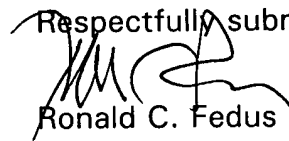
The above citation of documents is not a representation that these documents constitute a complete or exhaustive listing, nor that the above listing necessarily includes the closest or most relevant documents, nor are these documents necessarily a complete listing of all documents known to Applicants or their attorney. It is simply a voluntary citation of documents made in good faith, which is not intended to serve in any way as a substitute for the Examiner's own search.

In view of the general and specific features described and claimed in the present application, Applicants respectfully submit that the present invention is neither disclosed nor suggested by the documents referred to above and is thus patentably distinct thereover. Furthermore, Applicants do not believe, and do not submit, by the citation of these references, that these documents, either by themselves or in combination with other documents, render the invention *prima facie* obvious under the duty of disclosure rules.

Elazar Rabbani et al.  
Serial No. 08/978,633  
Filed: November 25, 1997  
Page 12 (Information Disclosure Statement Under 37 C.F.R. §§1.56 & 1.97-1.98  
– March 7, 2003)

Applicants respectfully request that the Examiner make the above-submitted documents of record in the instant application. Applicants further request that the Examiner consider these documents as any of them may relate to the instant application.

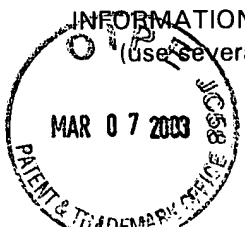
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Respectfully submitted,  
  
Ronald C. Fedus  
Registration No. 32,567  
Attorney for Applicants

ENZO THERAPEUTICS, INC.  
c/o Enzo Biochem, Inc.  
527 Madison Avenue (9<sup>th</sup> Fl.)  
New York, New York 10022  
Telephone: (212) 583-0100  
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	Applicants: Elazar Rabbani et al.,	
	Filed: November 25, 1997	Group: 1635

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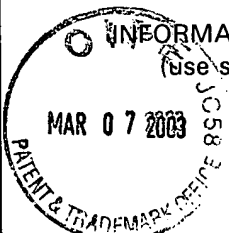
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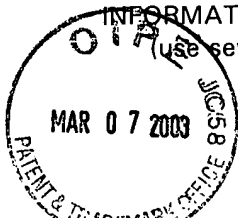
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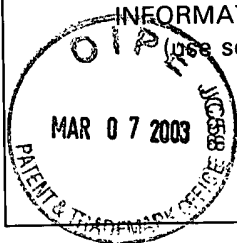
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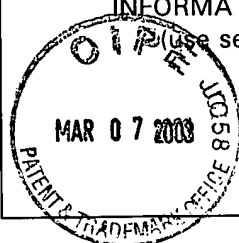
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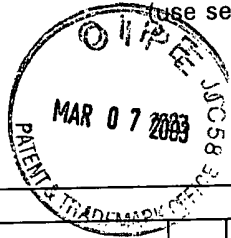
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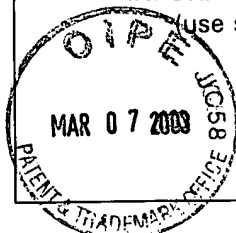
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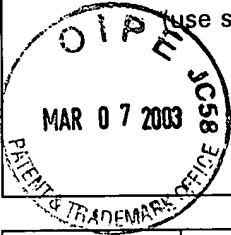
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